

2.20 Invasive Species

This section of the document discusses invasive species with the potential to occur within the BSA and summarizes the results of fieldwork conducted to date as well as the NES (September 2010).

2.20.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.20.2 Affected Environment

Highway corridors provide opportunities for the movement of invasive species through the landscape. Invasive species can move on vehicles and in the loads they carry. Invasive plants can be moved from site to site during spraying and mowing operations. Weed seed can be inadvertently introduced into the corridor on equipment during construction and through the use of mulch, imported soil or gravel, and sod. In erosion control, landscape, or wildflower projects, some invasive plant species might be planted deliberately. Highway rights-of-way provide ample opportunity for weeds in adjacent land to spread along corridors that span, on a national scale, millions of miles of highway.

The California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory is based on information submitted by members, land managers, botanists, and researchers throughout the State as well as published sources. The inventory highlights nonnative plants that are serious problems in wildlands (natural areas that support native ecosystems, including national, State, and local parks; ecological reserves; wildlife areas; national forests; Bureau of Land Management lands; etc.). The Invasive Plant Inventory categorizes plants as High, Moderate, or Limited based on the species’ negative ecological impact in California. Plants categorized as “High” have severe ecological impacts. Plants categorized as “Moderate” have substantial

and apparent, but not severe, ecological impacts. Plants categorized as “Limited” are invasive, but their ecological impacts are minor on a statewide level.

There are exotic plant species in the BSA within the nonnative plant communities, within patches of native plant communities, and in areas that have been disturbed by human uses. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. In the past, these areas in the BSA likely supported grassland, oak woodland, CSS, and riparian habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas.

A total of 44 exotic plants occurring on Cal-IPC’s California Invasive Plant Inventory were identified. Of these species, there are seven with an overall high rating, 23 with a moderate rating, and 14 with a limited rating. Invasive species that have severe ecological impacts are given a high rating. Species with a high rating identified within the BSA are: Hottentot-fig (*Carpobrotus edulis*), sweet fennel (*Foeniculum vulgare*), English ivy (*Hedera helix*), tamarisk (*Tamarix* sp.), giant reed (*Arundo donax*), foxtail chess (*Bromus madritensis* ssp. *madritensis*), and pampas grass (*Cortaderia selloana*). These observations should not be considered all-inclusive.

2.20.3 Environmental Consequences

2.20.3.1 Temporary Impacts

Alternative 1 – No Build Alternative

The No Build Alternative proposes no construction or other disturbance in the study area. Therefore, the No Build Alternative would result in no adverse impacts related to invasive species.

Build Alternatives 2 and 4 – Design Options A and B

Implementation of the Build Alternatives would have the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that seed is spread along the highway. With implementation of Minimization and Avoidance Measure BIO-17, temporary invasive species impacts are not anticipated.

2.20.3.2 Permanent Impacts

Alternative 1 – No Build Alternative

The No Build Alternative proposes no construction or other disturbance in the study area. Therefore, the No Build Alternative would result in no adverse impacts related to invasive species.

Build Alternatives 2 and 4 – Design Options A and B

Implementation of the Build Alternatives would have the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that seed is spread along the highway. The plant palette used for revegetation would not include invasive species. Therefore, the Build Alternatives for the proposed project would not have a substantial effect on invasive species.

2.20.4 Avoidance, Minimization, and/or Mitigation Measures

In compliance with EO 13112, weed control will be performed to minimize the importation of nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. Measures addressing invasive species abatement and eradication will be included in the project design and contract specifications. These measures may include, but not be limited to:

- BIO-15**
- All construction site best management practices (BMPs) from the Storm Water Pollution Prevention Plan (SWPPP) will be followed.
 - After construction, affected areas adjacent to native vegetation will be revegetated with plant species native to the vicinity approved by the California Department of Transportation District Biologist.
 - After construction, all revegetated areas will avoid the use of species listed in the California Invasive Plant Council California Invasive Plant Inventory that have a high or moderate rating.
 - A plant establishment period will be developed for revegetated areas during final design. A plant establishment period is a duration of time that allows newly installed plant material to reach a state of maturity, requiring minimal ongoing maintenance for survival. A plant establishment period typically includes the removal of litter and trash, weeding, water application, irrigation

repair, replacement of plant material that dies, and other activities required to ensure the long-term survival of plant material.